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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,197

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EXAMINER

QUDDUS, NUSRAT

ART UNIT

PAPER NUMBER

2838

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,197	Applicant(s) SOLYOM ET AL.	
	Examiner NUSRAT J. QUDDUS	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant's arguments and amendments (where original claims 1-4 is canceled) with respect to claims 5-8, filed on 12/22/2009 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

Figure 1 (SPEC, P2 L11-P3 L12) should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

APPROPRIATE CORRECTION IS REQUIRED.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-7 are rejected under 35 U.S.C 103 (a) as being unpatentable over AAPA (Applicant's Admitted Prior Art), in view of Persson et al. (6313614, referred as Persson from here forth).

Regarding **claim 5**, AAPA teaches of (Fig. 1, SPEC, P2 L11-P3 L12) a method for voltage stabilization of an electrical power network system comprising a producing power network system side (Eo), a consuming power network side comprising a power load (Zld), a power transmission line with an impedance (ZLN), a transformer (using 'ratio: n' sign that is in between V1 and V2) and an on-line tap changer (OLTC) added to the transformer, the method comprising : measuring the impedance of the line in case of dynamic instabilities; and controlling a transformer ratio n by changing a voltage reference (Vref) of the on-line tap changer (OLTC), wherein the voltage reference (Vref) is changed according to a ... compensation from the impedance of the line (ZLN).

However, AAPA fails to explicitly teach of controlling a transformer ratio n by changing a voltage reference Vref of the on-line tap changer, wherein the voltage reference is changed according to a feed forward compensation from the impedance of the line.

However, Persson teaches of (Fig. 1, Abstract and col. 17 L54-col. 18 L17) controlling (dynamically controlling the transformer ratio n (RAT) using TCDD, col. 8 L10-46) a transformer ratio n (RAT) by changing a voltage reference Vref (using TCCD to change control range of transformer's ratio RAT) of the on-line tap changer (TC), wherein the voltage reference is changed according to a feed forward compensation (using frequency analyzing subunit 211-215 after receiving 20 and 29's signal, which is part of TCDD (wherein TCDD located on the primary side of the transformer (or in another word transformer used as a controlled entity to meet load's requirement), thus measuring input side of it (i.e. frequency, impedance value, etc))) from the

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impedance of the line (by using a Fourier filter (which is obvious to one of ordinary skill in the art to have known that filters are made of impedance components in order to control certain signals: phases, current and/or voltages, as required, col. 8 L47-col. 9 L42 and col. 13 L7-49) [Persson furthermore teaches of a method for voltage stabilization of an electrical power network system (col. 7 L61-col. 8 L9) comprising a producing power network system side (UP) and a consuming power network side (US), having an on-line tap changer (TC) added to a transformer (TR)].

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use Person's taught dynamically controlled operation (especially using TCDD, as a feed-forward (by having it connected to AAPA's taught power transmission line with impedance) and feedback controller (which is explicitly taught in col. 3 L1-5 by Persson; and by having it connected to AAPA's taught load)) to change AAPA's taught voltage reference in order to change the ratios of the AAPA's taught transformer, as doing so would improve in stabilizing the variable voltages (which comprises of at least a first control component representing fundamental component of the load; and also actual fundamental frequency of the power network (from the input side), as taught by Persson) by forming a control quantity that permit's a better accuracy in determination of the control signal of the control equipment (of transformer), resulting a stable circuit operation continuously, as taught by Persson (col. 2 L58-col. 3 L20)

Regarding **claim 6**, please see the cited and combined teaching of AAPA and Persson, in above claim 5.

Furthermore, the combined teaching of AAPA and Persson also shows that the feed forward compensation drives (TCDD, as taught by Persson after being combined with AAPA) when combined with the power network system (as taught by AAPA) to a stable equilibrium point in a stable region (as taught by both AAPA and Persson), and wherein the stable region lies below a

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loci for maximum power transfer ~~OBJ~~ (obvious after the combinational use of both reference), where YLD is power load admittance (as taught by AAPA), ZIN (as taught by AAPA) is transmission line impedance and n is the transformer ratio (as taught by both reference).

Regarding **claim 7**, please see the cited and combined teaching of AAPA and Persson, in above claim 5.

Furthermore, the combined teaching of AAPA and Persson also shows that the feed forward compensation (using frequency analyzing subunit 211-215 after receiving 20 and 29's signal, which is part of TCDD, as taught by Persson) is provided by a first order filter (col. 17 L9-53 (Also see, equation 15 and 17-18 (col. 7 L1-31, col. 13 L8-49 and col. 15 L5-41). Furthermore, 'T or f' and 'T or f sub s' are used to set tuning parameters per sample, as required by the load).

Claim 8 is rejected under 35 U.S.C 103 (a) as being unpatentable AAPA, in view of Persson (6313614), in view of Carver et al. (US 4434388, as taught by Carver from here forth).

Regarding **claim 8**, please see the cited and combined teaching of AAPA and Persson, in above claim 5.

However, the combined teaching of AAPA and Persson fail to explicitly teach about a feedback controller with tuning parameter influencing the region of attraction of the equilibrium point.

However, Carver teaches about a feedback controller (Fig. 3, 31, col. 6 L37-col. 7 L1 and col. 7 L30-40) with tuning parameter (to control the variable transformer (i.e. tap changer or by controlling the ratio of the N turns of the transformer) influencing the region of attraction of the equilibrium point (as required by the load).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use Carver's taught feedback controller in Persson's taught voltage stabilization and power network system, as doing so would improve in configuring the turn ratio of an

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autotransformer with smaller and more effective coil configurations using improved control device providing a regulated output (making sure of the equilibrium point) from an unregulated input, thereby saving costs in material and labor, as taught by Carver (col. 7 L10-22).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to NUSRAT J. QUDDUS whose telephone number is (571)270-7921. The examiner can normally be reached on M-Th from 7:30AM to 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MONICA LEWIS, can be reached on (571)272-1838. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/NUSRAT J QUDDUS/
Examiner, Art Unit 2838
03/11/2010

/Gary L. Laxton/
Primary Examiner, Art Unit 2838